

Beginner	1	2	3	4	5	Advanced
SKILL LEVEL						
A	400	C	1300			
1/2A	220	B	700			
Engine	Feet	Engine	Feet			
Altitudes depend greatly on the quality of assembly and finishing.						
TYPICAL ALTITUDES						

1 MODEL KIT
Paint and Glue not included.
1 MODÈLE RÉDUIT
Peinture et Colle non comprises.

REQUIRED
White Glue
Plastic Glue
Small Brush
Balsa Filler
Fine Sandpaper
Spray Paint

OPTIONAL
TOOLS YOU WILL NEED:



SCRAM-JET

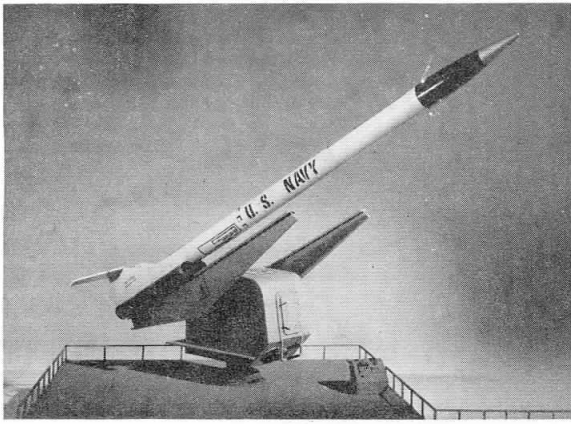
FLYING MODEL ROCKET

- Great Sport Rocket
- Unique Off-Center Fins
- Super Detailing Decals
- Fast Assembly



RECOMMENDED ENGINES
Not included
1/2A6-4 A8-5 B4-6
B6-6 C6-7

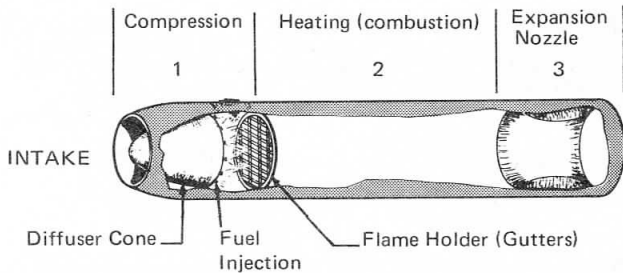
SPECIFICATIONS
Length 18.8"
Body Dia. .76"
Net Wt. 1.3 oz.



Shipboard Controlled Rocket Assisted Missile . . . Sounds impressive, but what does it mean?

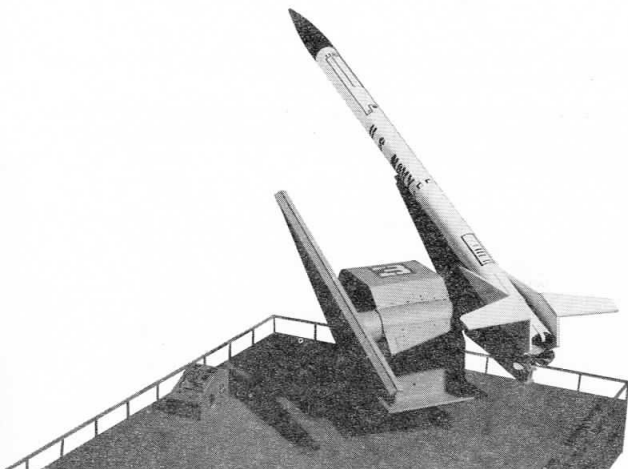
Well, here's our "blue-sky" proposal, which may not be too strange after all . . . (you'd be surprised at some of the knowledge and ideas that real Aerospace engineers have gained from "playing" with model rocketry).

A ram-jet is a type of jet reaction engine that has been used in a few missiles, but is still basically under development. The ram-jet is more efficient than a rocket, but less efficient than a gas turbine jet engine. However, ram-jets contain no moving parts and can operate at higher altitudes than gas turbines. A ram-jet's biggest drawback is that it must already be traveling at a speed of several hundred miles per hour before the air is rushing into its intake fast enough for the engine to be self-sustaining. This simply means you must use some other force to make the ram-jet travel fast enough for it to start. Ram-jet engines have been used in the Navaho, Bomarc, Talos and Hermes missiles.



In our purely imaginary proposal, a real "scram-jet" would use a conventional solid-propellant rocket motor to attain starting speed then the ram-jet (tubes under the body) would kick in.

A real scram-jet would use its fuel more economically than a conventional rocket. It could cruise for a relatively long time under remote control. It would assume a horizontal altitude, like an airplane, and possibly be guided by flaps and canards. This kind of rocket-jet could be very useful for unmanned photo reconnaissance missions in hazardous enemy territory; It could act as a highly maneuverable and low cost target for supersonic military marksmanship practice; it could be used for ecology and weather study by traveling thru hurricanes and other storms too dangerous for manned aircraft . . . actually, there are many very good and useful things that rockets can be used for, besides weapons.



SCRAM JET

Catalog No. KF-4

Here's the SCRAM-JET, hot off the drawing board and fresh from the desert proving grounds! When one of our R & D designers dreamed this bird up a while ago, we all insisted it wouldn't fly straight . . . but it does!

Inspired a little by supersonic air planes, military target drones, and even dragsters, the SCRAM-JET is an "imaginary" rocket right out of the Centuri Think-Tank!

The Armed Forces don't really have anything like this (despite the U.S. Navy markings!), but you can fly it now - as soon as the glue and paint dries.

Complete with unique decals, the SCRAM-JET looks as real as any full-size rocket that might be flying now.

If your friends ask what kind of rocket it is, tell them its a scale model of itself!

Please observe all local, state and federal laws when flying model rockets. Use electrical launchers and flameproof wadding for safe-flights.



MODEL ROCKETEER'S SAFETY CODE

CONSTRUCTION

My model rockets will be made of only lightweight materials such as paper, wood, plastic, and thin metallic foils, with the exception of payloads and engine holders made of wirelike material.

ENGINES

I will use only pre-loaded factory made model rocket engines in the manner recommended by the manufacturer. I will not change in any way nor attempt to reload these engines.

RECOVERY

I will always use a recovery system in my model rockets that will return them safely to the ground so that they may be flown again.

WEIGHT LIMITS

My model rocket will weigh no more than 453 grams (16 oz.) at liftoff, and the engines will contain no more than 113 (4 oz.) of propellant, as prescribed by Federal Regulations.

STABILITY

I will check the stability of my model rockets before their first flight except when launching models of already proven stability.

LAUNCHING SYSTEM

The system I use to launch my rockets will be remotely controlled and electrically operated, and will contain a switch that will return to "off" when released. I will remain at least 10 feet away from any rocket that is being launched.

LAUNCH SAFETY

I will not let anyone approach a model rocket on a launcher until I have made sure that either the safety interlock key has been removed or the battery has been disconnected from my launcher.

LAUNCH AREA

My model rockets will always be launched from a cleared area, free of any easy-to-burn materials, and I will only use non-flammable recovery wadding in my rockets.

BLAST DEFLECTOR

My launcher will have a blast deflector device to prevent the engine exhaust from hitting the ground directly.

LAUNCH ROD

To prevent accidental eye injury I will always place the launcher so the end of the rod is above eye level or cap the end of the rod with my hand when approaching it. I will never place my head or body over the launching rod. When my launcher is not in use I will always store it so that the launch rod is not in an upright position.

POWER LINES

I will never attempt to recover my rocket from a power line or other dangerous places.

LAUNCH TARGETS AND ANGLE

I will not launch rockets so their flight path will carry them against targets on the ground, and will never use an explosive warhead nor a payload that is intended to be flammable. My launching device will always be pointed within 30 degrees of vertical.

PRE-LAUNCH TEST

When conducting research activities with unproven designs or methods, I will, when possible, determine their reliability through pre-launch tests. I will conduct launchings of unproven designs in complete isolation from persons not participating in the actual launching.

FLYING CONDITIONS

I will not launch my model rocket in high winds, near buildings, power lines, tall trees, low flying aircraft or under any conditions which might be dangerous to people or property.

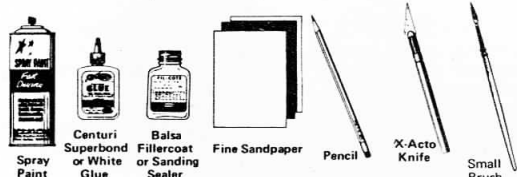
IP-483-1072

ASSEMBLY INSTRUCTIONS

FOR BEST RESULTS... FOLLOW DIRECTIONS CAREFULLY!

TOOLS:

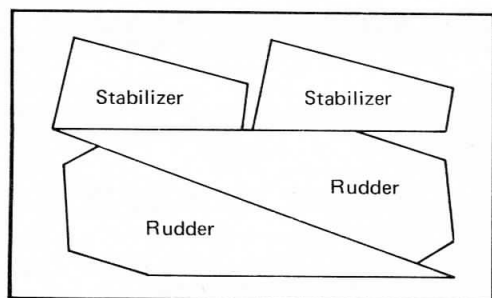
Besides the parts included, you will need the following tools to assemble and finish your rocket.



IMPORTANT NOTE:

The design of the Scram-Jet has been carefully worked out thru experimentation. At first glance it looks like it might not fly straight because it doesn't have symmetrical fins all the way around. It DOES fly straight, as you will see if you build it neatly. The open ram-jet tubes act as just the right counterforce to the offset fins to keep the flight path straight. PLEASE DO NOT "CUSTOMIZE" THE SCRAM-JET, such as by adding small nose cones to the ram-jets... it will probably crash if its basic shape is changed.

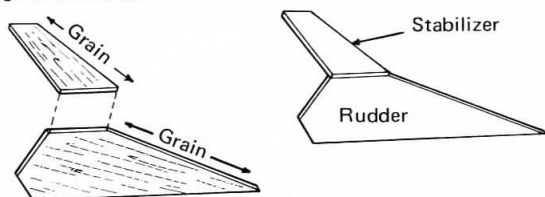
- 1 Identify the balsa fin parts and remove them carefully from their die-cut sheet. Use a knife, if necessary, to avoid tearing the balsa. Run each edge gently over fine sandpaper to ensure straight edges.



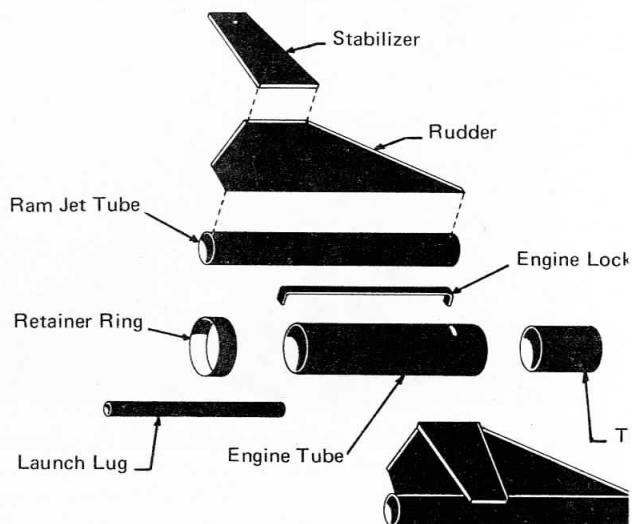
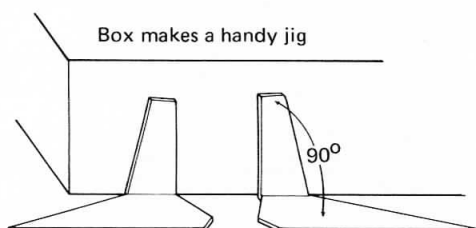
Square-up Edges



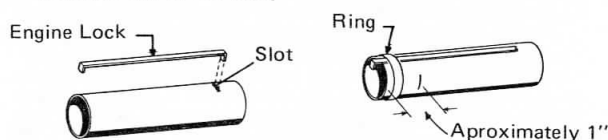
- 2 Glue each stabilizer to its rudder as shown by applying a fine bead of glue to each edge, letting it become tacky, then joining. Be sure to align the parts neatly and have the wood grain running as shown. Refer to the TOP, SIDE, & REAR views above to understand the fin relationship. You need to make a matching pair, where each fin assembly is a mirror image of the other.



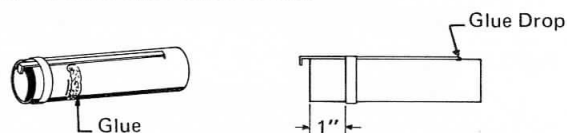
- 3 While the glue is still drying, position the fin assemblies against a right-angle jig, such as a box sitting on the table top. If you are sloppy at any point in the fin assembly your rocket will "corkscrew" in flight, rather than traveling straight.



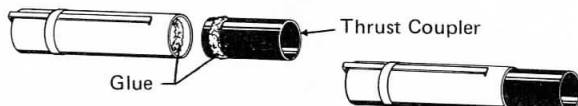
- 4 To start assembling engine mount: Push one end of the engine lock into the pre-slotted engine tube. Slide the retainer ring over the lock and tubes. Make a pencil mark about 1" from the end of the tube.



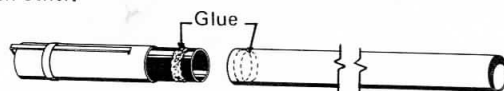
- 5 Run a bead of glue around the tube, above the pencil mark. Slide the retainer ring into place 1" from the end. Apply a drop of glue where the engine lock sticks into the tube. Wipe away any excess glue, before it dries.



- 6 Run a bead of glue around the inside of the engine tube's other end, and around the thrust coupler as shown. Insert the coupler with a twisting motion, until it butts against the engine lock. Wipe away excess glue.

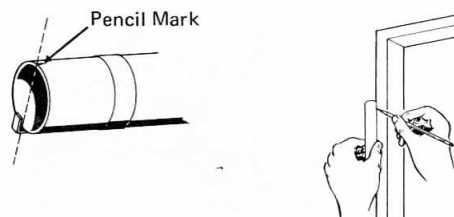


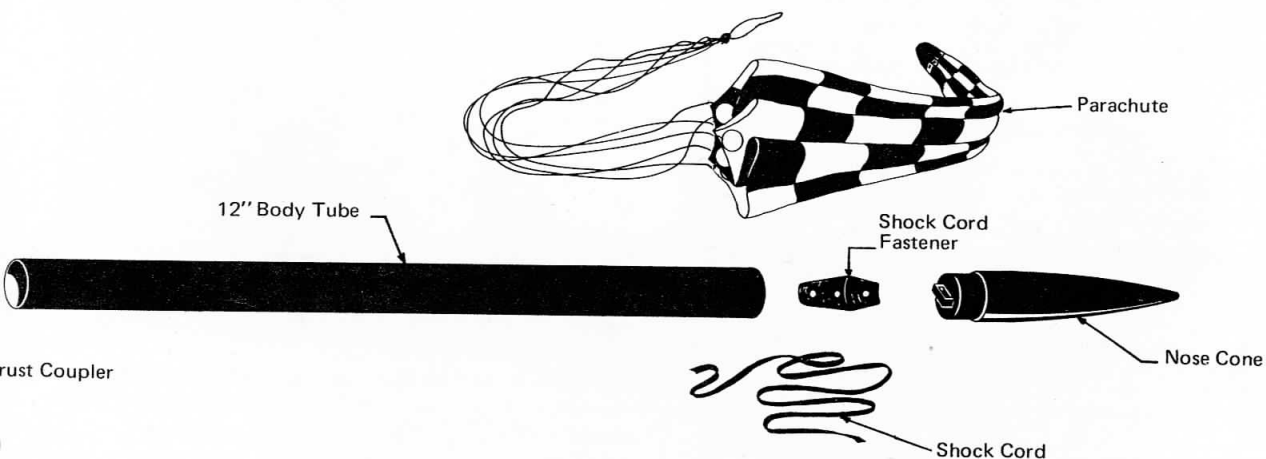
- 7 Repeat procedure to glue on main body tube. Look at assembly from all angles to be sure the tubes are in line with each other.



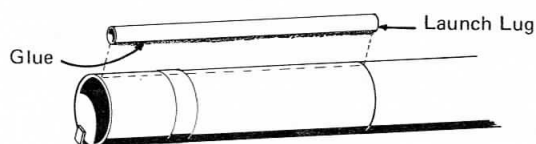
- 8 Make a small pencil mark on the engine tube, directly across from the engine lock.

Find a convenient groove or channel, such as a door jamb or partially open drawer. Extend the mark into a straight guide line for gluing on the launch lug.

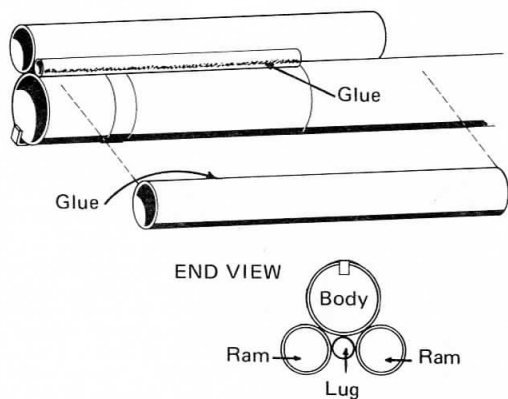




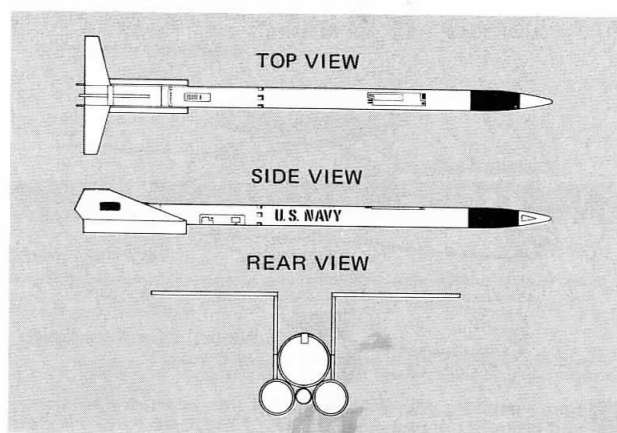
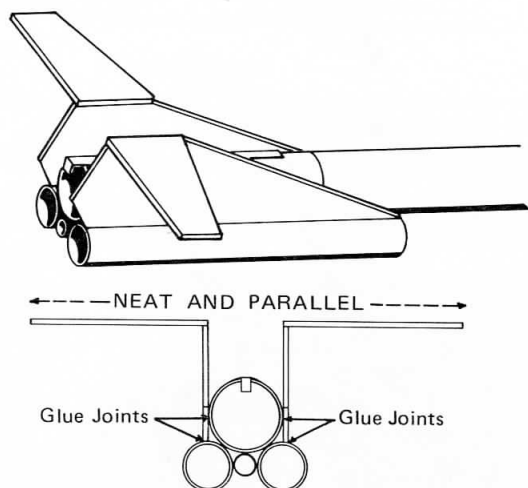
- 9** Run a glue bead along the launch lug and position it as shown. Double check for neat, parallel alignment because the position of the lug will determine the fin positions later.



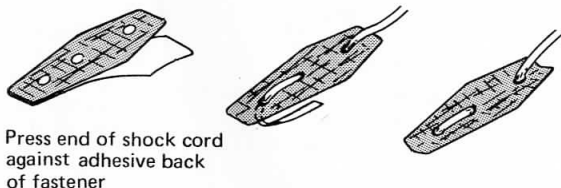
- 10** Run glue beads along one side of the lug and along one ram jet tube. Position neatly in place as shown, and repeat with the other side.



- 11** Hold the fin assemblies against the body and ram tubes to see where they touch. Apply glue to the fin assemblies and align them neatly in place.

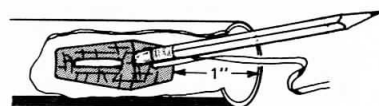


- 12** Peel the backing from the shock cord fastener. Thread the end of the elastic shock cord through the fastener as shown. Take care not to touch the adhesive backing any more than absolutely necessary. Slightly crease the fastener lengthwise to allow easy insertion into tube.

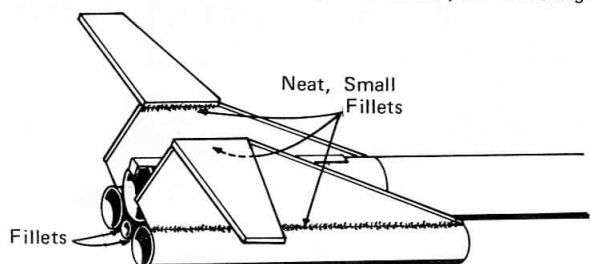


- 13** Insert the fastener 1" past the top of the body tube. Press firmly against the inside wall of the tube with a finger or eraser end of a pencil. NOTE: All edges of the fastener must be firmly contacted to the tube to insure a permanent bond.

Press fastener firmly into place



- 14** Do not tie shock cord onto the nose cone until later after painting. After the fin assembly has completely dried, run a bead of glue along each fin joint. Using your fore-finger smooth the glue into even fillets, and allow to dry - checking alignment again. This technique is necessary for fin strength.



U.S. NAVY

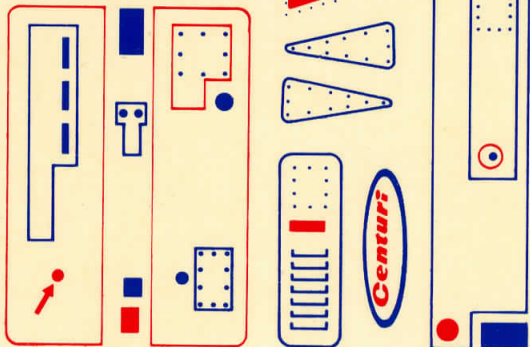
U.S. NAVY



SA72-3325
SCRAM-JET

SA72-3325
SCRAM-JET

M-347



PROPERLY APPLIED YOUR DECAL WILL GIVE
LONG LASTING SERVICE.

INSTRUCTIONS

1. CLEAN SURFACE FREE OF OIL OR GREASE.
 2. DIP DECAL IN WATER, APPROX. 10 SEC.
 3. HAVE SURFACE VERY WET FOR EASY SLIDING INTO POSITION.
 4. SLIDE DECAL FROM PAPER TO PROPER LOCATION.
 5. WITH SQUEEGE OR ROLLER REMOVE ALL AIR BUBBLES.
 6. WASH DECAL TO REMOVE EXCESS ADHESIVE.
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